

Operators Manual

RS232 Installation Guide & Commands

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This symbol marks chapters and sections of this instruction manual which are particularly relevant to safety. When attached to the unit, this symbol draws attention to the relevant section of the instruction manual.



This symbol indicates hazardous voltages may be present.

***Read all instructions pertaining to safety, setup and operation.
Proper operation is the users' responsibility.***

Section 1 - General Information

1.1 Warranty

Thank you for your purchase. We are confident it will serve you a long time. Our warranty to you is as follows:

We agree to correct for the original user of this product, either by repair, or at the manufacturer's election, by replacement, any defects in parts and labor after delivery of this product to the original use which develop within the period stated on the warranty card. In the event of replacement, the replacement unit will be warranted for 90 days or warranted for the remainder of the original warranty, whichever is longer.

If this product should require service, contact the office where the unit was purchased for instructions. When return of the product is necessary, a return authorization number will be assigned and the product should be shipped, (transportation charges pre-paid), to the indicated service center. To insure prompt handling, the return authorization number should be placed on the outside of the package and a detailed explanation of the defect enclosed with the product.

This warranty shall not apply if the defect or malfunction was caused by accident, neglect, unreasonable use, improper service, modification or other causes not arising out of defects in material or workmanship. There are no warranties, expressed or implied, including, but not limited to, those of merchantability or fitness for a particular purpose that extends beyond the description and period set forth herein.

The manufacturer's sole obligation under this warranty is limited to the repair or replacement of a defective product and shall not, in any event, be liable for any incidental or consequential damages of any kind resulting from use or possession of this product.

Some states do not allow: (A) limitations on how long an implied warranty lasts or (B) the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

1.2 Unpacking

Your product is shipped in a special carton. Retain the carton and all packing materials until the unit is completely assembled and working properly. Set up and run your product immediately to confirm the unit is working properly. If there is obvious damage, do not operate. Beyond one week, the unit may be warranty repaired, but not replaced. If the unit is damaged or does not operate properly, contact the transportation company, file a damage claim and contact the office where the unit was purchased.

1.3 Package Contents

-RS232 Adapter Board 500-179

-(2) Screw Lock, Female 400-482

-(2) Washer, Splitlock 400-034

-(2) Nut, 4-40 Hex SS 400-033

-Manual, RS232 Installation Guide and Commands 110-183

1.4 Description

The RS232 Adapter provides the user with additional application options for their chiller. With this option installed, the user may remotely communicate using a standard PC equipped with the Windows Operating System. Capabilities include an on/off function, set bath temperature, return current bath temperature, and more. This option provides the chiller with greater flexibility for your applications.



Before proceeding, be sure the input power plug is NOT plugged in the unit

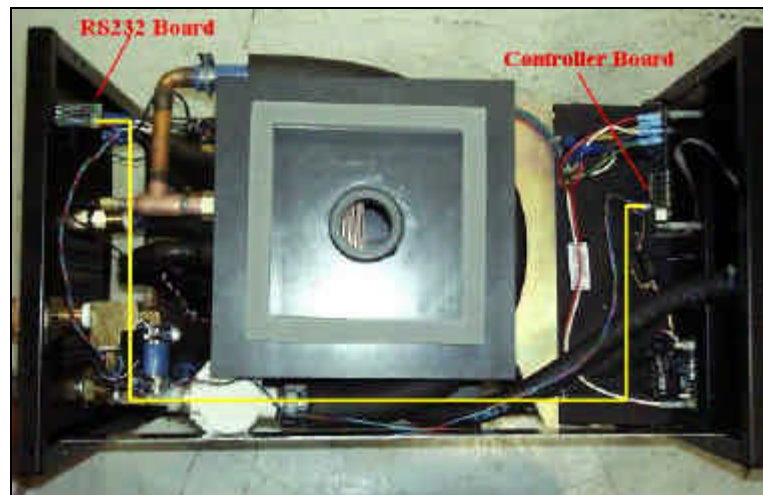
Section 2 - Hardware Installation

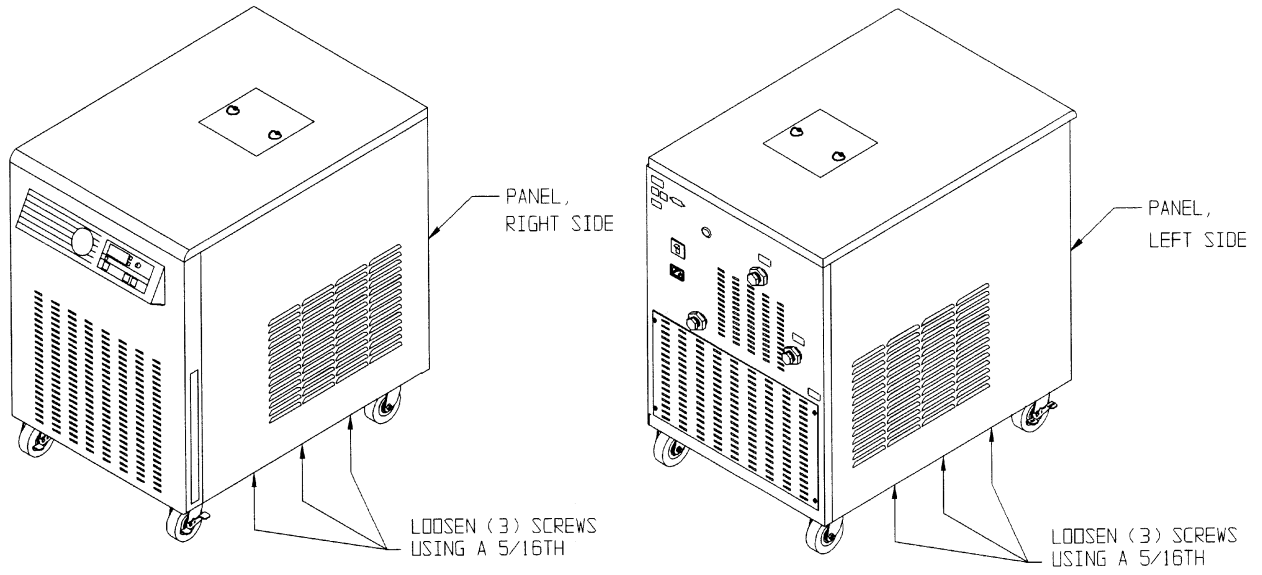
1. Loosen (3) 400-169 screws using a 5/16th nut driver. The screws should not be removed. The panel should easily pull out at the bottom. Remove 701-363 PANEL, RIGHT SIDE from the chassis. Repeat this step for the left side of the unit. Refer to drawing 2.2: Chiller.
2. Using a punch and a hammer, punch out the RS-Knockout. Hit the knockout from the inside of the unit. Refer to drawing 2.3: Rear Panel Detail.
3. Secure 500-179 PCB ASM, RS 232 ADAPTER to the back plate using (2) 400-482 SCREW LOCK, FEMALE, (2) 400-034 WASHER, SPLITLOCK and (2) 400-033 NUT 4-40 HEX SS. Refer to drawing 2.3: Rear Panel Detail. Tighten the 400-482 SCREWLOCK, FEMALE using a 1/4th inch nut driver.
4. Secure the floating end of 525-406 HARNESS, WIRE RS232 to the control board. Attach the cable to the open connector in the center of the board. The cable should only fit comfortably in one direction. Refer to Figure 1 below:



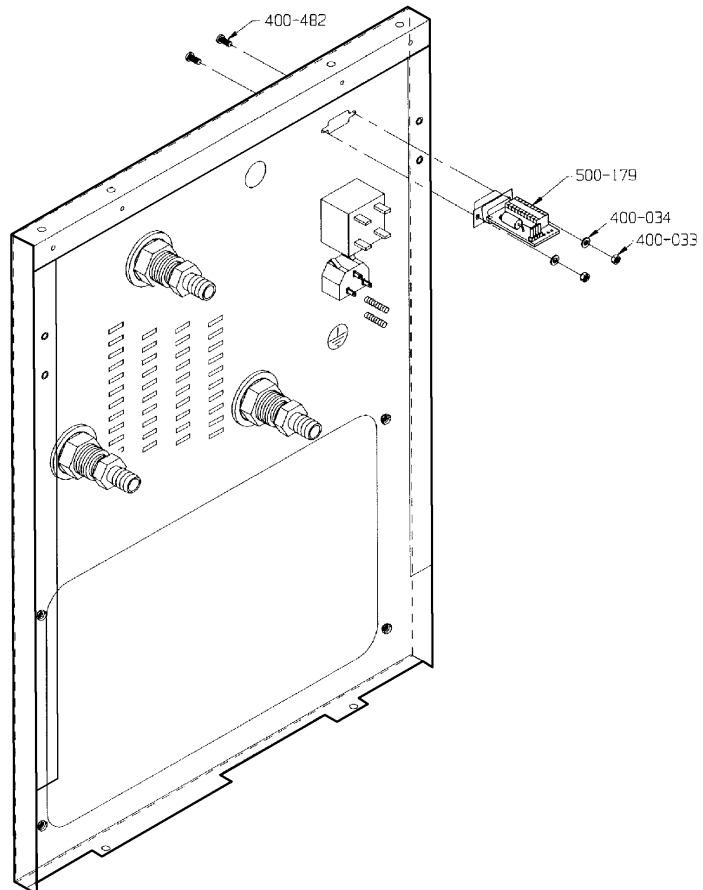
Figure 1: RS232 Adapter Cable connected to the control board.

5. Route the 525-406 HARNESS, WIRE around the right side of the unit. The cable may rest without cable ties. Refer to Figure 2 below:





2.2 : Chiller



2.3 : Rear Panel Detail

Section 3 - Setup

Win95/98 Setup

This procedure will establish a communications link between the unit and a PC.

1. Click on Start/ Programs/ Accessories/ and select HyperTerminal. Several icons will be visible. Select the 'hyperterm' icon. A dialog box will appear stating: New Connection. Enter a name and choose an icon for the connection. Enter DTC and click on OK.

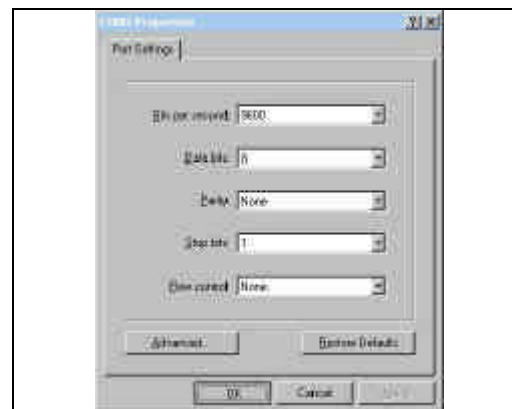


2. In the next dialog box, select CONNECT USING: Direct to Com1. Click on OK.

Warning: Many computers have a mouse installed on Com1. Choose another serial port (if available), or install the mouse on a different port.



3. Next, select the following options: Bits per second: 9600, Data bits: 8, Parity: none, Stop bits: 1, Flow control: none. Click on OK.



4. The computer is now set up and ready to run. Next time that HyperTerminal is opened, an icon will appear named DTC. Use this to send and receive commands.



Section 4 - Commands

With your link established, the RS232 commands are:

on(enter)	Turns the unit on.
off(enter)	Turns the unit off.
f?(enter)	Returns the bath temperature.
d?(enter)	Returns the unit of measure (either C or F).
s?(enter)	Returns the set temperature for the unit.
s(number)(enter)	Changes the set temperature to the number entered.
a0(enter)	No echo, no messages. All commands return a 0.
a1(enter)	Echo (default, normal operation).
a2(enter)	No echo, messages returned followed by a 0.

Notes: The temperature values returned are in degrees Celsius by default. If you change the units to degrees Fahrenheit via the chiller's control panel, the returned values will also be in Fahrenheit.

If your HyperTerminal connection is disconnected, the chiller will continue to operate.

Section 5 - Troubleshooting

No text appears when typing commands in HyperTerminal.

- The port is not set up correctly. Refer to Section 3 - Setup.
- Check all connectors for proper orientation. Refer to the photos in Section 2 - Hardware Installation.
- Be sure the chiller's breaker is on. The digital display should show four decimals: [. . .].
- HyperTerminal may be set to the wrong port. Refer to Section 3 - Setup.
- The chiller's control board may have an outdated software version if purchased before May 2000. Contact your place of purchase for your free upgrade.

Chiller operates, but only a '0' is returned to the PC.

- The chiller is set to a no echo mode. Type 'a1(enter)' to set the chiller to default mode. Messages should now be returned.

The wrong temperature is returned

- The chiller may be set to a different unit of measure.
- Type 'd?(enter)' to find out if the chiller is set to C or F.
- The unit of measure may be changed from the chiller's front panel. Consult the chiller's operator manual.

After issuing an 'on' command, the chiller does not turn on right away

- Check for a 60-second countdown displayed on the chiller's front panel. This is normal for operation.

Section 6 - Service and Technical Support

If you have followed the troubleshooting steps and your chiller and RS232 Adapter fail to operate properly, contact the company where the unit was purchased. Have the following information available for the customer service person:

- Model and Serial Number
- Date of purchase and your purchase order number
- Suppliers' order number or invoice number
- A summary of your problem